

ABSTRACT OF THE DISCLOSURE

The present invention generally provides a process for depositing silicon carbide using a silane-based material with certain process parameters that is useful for forming a suitable ARC for IC applications. Under certain process parameters, a fixed thickness of the silicon carbide may be used on a variety of thicknesses of underlying layers. The thickness of the silicon carbide ARC is substantially independent of the thickness of the underlying layer for a given reflectivity, in contrast to the typical need for adjustments in the ARC thickness for each underlying layer thickness to obtain a given reflectivity. Another aspect of the invention includes a substrate having a silicon carbide anti-reflective coating, comprising a dielectric layer deposited on the substrate and a silicon carbide anti-reflective coating having a dielectric constant of less than about 7.0 and preferably about 6.0 or less.

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